PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Goedeken et al.	**Examiner:**	Tran Lien, Thuy
Serial No.:	10/677,029	**Group Art Unit:**	1794
Filed:	October 1, 2003		
For:	DOUGH COMPOSITIONS AND RELATED METHODS	**Docket No.**	P6187US (PIL0164/US)

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. §1.132

Dear Sir or Madam:

I, David I. Domingues, declare and say as follows:

1. I am a citizen of the United States of America, and reside at 14520 - 39th Avenue North, Plymouth, Minnesota 55441.

2. I am presently a Fellow at General Mills, Inc. in the Innovation, Technology, and Quality division. I am named a joint inventor of the above-identified patent application.

3. I have read and am thoroughly familiar with the final Office Action mailed December 7, 2007, the documents cited therein, including U.S. Patent No. 5,451,417 (Freyn et al.), and the Response and Amendment filed concurrently herewith. I am also familiar with the dough formulations described in the above-identified patent application. I therefore make this Declaration in support of the patentability of claims of the application.

4. I prepared the following dough formulations:

Inventive Dough Formulation – Example 2 formulation in Table 2-A on page 19 of Applicants' specification.

Ingredient	Bakers %
flour	100
sucrose	5.42
e-soda (80% sodium bicarbonate, 20% hydrogenated vegetable shortening)	1.88*
glucono-delta-lactone (GDL)	2.57
water	59.81
cake yeast	3.62
shortening	7.5**

* Table 2-A in Applicants' specification shows that 2.15 Bakers % of BAKESURE 195 was used. BAKESURE 195 has an activity of 70% soda and 30% shortening. 2.15 Bakers % of BAKESURE 195 corresponds to 0.83 weight percent of soda based on the total weight of the dough composition. BAKESURE 195 was not available for the experiment in support of this Affidavit so a substitute e-soda was used in the amount of 1.88% Bakers percent. The substitute e-soda has an activity of 80% soda and 20% shortening. 1.88% Bakers percent of the substitute e-soda corresponds to 0.83 weight percent of soda based on the total weight of the dough composition (comparable amount to that evaluated in the applicant's specification).

** Table 2-A in Applicants' specification shows that shortening was used in the amount of 7.23 Bakers %. Since, as discussed above, a higher activity e-soda was used, a higher amount of shortening was used to balance the formula (7.5 Bakers percent). This slightly higher amount of shortening does not infer that more dough expansion would take place and that higher raw specific volume values would be achieved.

The ingredients of the Inventive Dough formulation were blended together in a mixing bowl and mixed on slow speed for 60 seconds followed by mixing at fast speed for 6 minutes.

Freyn et al. Formulation – Example 1, Sample B, at column 6 of the Freyn et al. reference:

Ingredient	Bakers%
flour	100
sucrose	5.36
non fat dry milk	4.02
whey	2.01
salt	1.41
baking soda	3.35
sodium aluminum phosphate	3.72
dough conditioner	0.67
(cake) yeast	6.7
water	70.31
shortening	13.39

Freyn et al. Formulation – Example 2, at column 7 of the Freyn et al. reference:

Ingredient	Bakers%
flour	100
sucrose	8.49
non fat dry milk	4.25
whey	2.12
salt	1.49
baking soda	3.54
sodium aluminum phosphate	3.93
dough conditioner	0.71
(dry) yeast	7.08
water	67.92
shortening	16.98

Freyn et al. Formulation – Example 5, Sample B, at column 8 of the Freyn et al. reference.

Ingredient	Bakers%
flour	100
sucrose	8.43
non fat dry milk	7.02
salt	1.48
baking soda	3.51
sodium aluminum phosphate	3.91
dough conditioner	0.7
(cake) yeast	16.86
water	63.23
shortening	21.07
Liquid egg	5.62

For Example 1, Sample B of the Freyn et al. reference, the dry ingredients of the Freyn et al. formulation were combined together in a mixing bowl. Then, water at 10-16°C (50-60.8°F) was added to the dry ingredients in the mixing bowl (spiral mixer). The ingredients were mixed on low speed for one (1) minute followed by high speed for 4 minutes.

For Example 2 and Example 5, Sample B, of the Freyn et al. reference, the dry ingredients of the Freyn et al. formulation were combined together in a mixing bowl. Then, water at 10-16°C (50-60.8°F) was combined with the yeast (and then liquid egg in Example 5, Sample B). The combined water, yeast (and liquid egg in Example 5, Sample B) were added to the dry ingredients in the mixing bowl (spiral mixer). The ingredients were mixed on low speed for one (1) minute followed by high speed for 5 minutes. For Example 2 and Example 5, Sample B, the mix time given in the Freyn et al. reference is 10 minutes but we mixed for 5 minutes to ensure that the dough could be handled and formed into sample pieces. A longer mix time would have resulted in a dough rheology that is too sticky and difficult to remove from the mixing bowl.

For each of the Inventive and Freyn et al. dough compositions, the doughs were formed into 75 gram balls and placed onto a line baking sheet (4 trays of 16 balls each

were made). Then, the baking sheet was covered with a plastic bag, frozen in blast freezer, and stored at -10°F for 24 hours.

5. The proofing properties of the "Freyn et al." dough samples, after thawing from a frozen state, were compared with the proofing properties of the "Inventive" dough, after thawing from a frozen state. With respect to independent claims 1, 12, and 21, the results show that, in accordance with the invention of the above patent application, dough compositions can be formulated to "proof" at a temperature in the range from 32°F to 46°F such that the dough increases in volume by 50% or more and has a raw specific volume in the range of from about 1.5 to about 3 cubic centimeters per gram (see the specification at, e.g., page 6, lines 16-24). The results further show that the dough samples prepared as described by Freyn et al. does not "proof" as described in the above patent application and claimed in amended claims 1, 12, and 21.

6. The initial raw specific volume (RSV) was determined via volumetric displacement. Then the covered trays were placed in atmospheres of 35°F, 40°F and 45°F, while RSV measurements and volume measurements were recorded as a function of time (duplicate measurements were recorded). The results of these tests, in percent increase in volume and cubic centimeters per gram, indicate substantially different proofing properties when comparing the inventive dough to the Freyn et al. dough samples:

35°F Data

Time (Hours)	RSV of Inventive Dough (cc/g)	RSV of Freyn et al. Dough example 1 sample B (cc/g)	RSV of Freyn et al. Dough example 2 (cc/g)	RSV of Freyn et al. Dough example 5 sample B (cc/g)
0	1.108	0.899	0.864	0.916
2	1.213	0.884	0.864	0.923
4	1.35	0.891	0.878	0.921
6	1.535	0.913	0.895	0.972
8	1.705	0.952	0.876	0.989
24	1.852	1.171	1.044	1.19

35°F Data

Time (Hours)	Percent volume change of Inventive Dough	Percent volume change of Freyn et al. Dough example 1 sample B	Percent volume change of Freyn et al. Dough example 2	Percent volume change of Freyn et al. Dough example 5 sample B
0	0	0	0	0
2	9.42	-1.58	0.04	0.77
4	21.8	-0.87	1.65	0.53
6	40.28	1.6	3.59	6.09
8	53.79	5.98	1.4	8
24	67.06	30.26	20.82	29.87

40°F Data

Time (Hours)	RSV of Inventive Dough (cc/g)	RSV of Freyn et al. Dough example 1 sample B (cc/g)	RSV of Freyn et al. Dough example 2 (cc/g)	RSV of Freyn et al. Dough example 5 sample B (cc/g)
0	1.108	0.899	0.864	0.916
2	1.242	0.877	0.864	0.915
4	1.474	0.912	0.887	0.949
6	1.609	0.945	0.894	0.99
8	1.777	1.004	0.935	1.124
24	1.938	1.248	1.146	1.228

40°F Data

Time (Hours)	Percent volume change of Inventive Dough	Percent volume change of Freyn et al. Dough example 1 sample B	Percent volume change of Freyn et al. Dough example 2	Percent volume change of Freyn et al. Dough example 5 sample B
0	0	0	0	0
2	12.05	-2.39	0	-0.06
4	33.01	1.47	2.73	3.61
6	45.14	5.13	5.49	8.12
8	60.37	11.78	8.25	22.69
24	74.87	38.93	32.67	34.13

45°F Data

Time (Hours)	RSV of Inventive Dough (cc/g)	RSV of Freyn et al. Dough example 1 sample B (cc/g)	RSV of Freyn et al. Dough example 2 (cc/g)	RSV of Freyn et al. Dough example 5 sample B (cc/g)
0	1.108	0.899	0.864	0.916
2	1.246	0.885	0.837	0.943
4	1.469	0.931	0.874	0.972
6	1.672	0.984	0.905	1.103
8	1.847	0.994	0.932	1.221
24	2.004	1.258	1.148	1.309

45°F Data

Time (Hours)	Percent volume change of Inventive Dough	Percent volume change of Freyn et al. Dough example 1 sample B	Percent volume change of Freyn et al. Dough example 2	Percent volume change of Freyn et al. Dough example 5 sample B
0	0	0	0	0
2	12.46	-1.50	-3.15	3
4	32.51	3.64	1.15	6.11
6	50.85	9.55	4.78	20.45
8	66.61	10.59	7.82	33.33
24	80.79	39.96	32.81	42.92

7. The inventive dough composition "proofed" at 35°F, 40°F and 45°F, i.e., dough increased in volume by 50% or more and had a raw specific volume in the range of from about 1.5 to about 3 cubic centimeters per gram.

8. The "Freyn et al." dough compositions did not "proof" at 35°F, 40°F and 45°F. The Freyn et al. dough compositions increased in volume by less than 50% at 35°F, 40°F and 45°F, and the raw specific volume of the Freyn et al. dough was less than 1.5 cc/g at 35°F, 40°F and 45°F.

9. This comparison demonstrates that dough compositions can be formulated as described and claimed in the above patent application to "proof" at a temperature in the range from 32°F to 46°F such that the dough increases in volume by 50% or more and

has a raw specific volume in the range of from about 1.5 to about 3 cubic centimeters per gram.

10. The Freyn et al. patent does not describe how to make a dough composition that can proof at a temperature in the range from 32°F to 46°F as described and claimed in the above-identified patent application.

11. Based on the above, it is my opinion that one of skill in the dough making art would not have found it obvious to prepare a dough composition that can proof at a temperature in the range from 32°F to 46°F, as described and claimed in the above-identified patent application, based on the Freyn et al. reference.

12. I further believe that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

Oct. 7, 2008
Date

By _____
David J. Domingues

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